DOCUMENT RESUME

ED 344 986 CE 060 735

AUTHOR Khawaja, Sarfraz; And Others
TITLE Technical Education: Its Relevance to Job Market. A Research Report. AEPAM Research Study, No. 90.
INSTITUTION Ministry of Education, Islamabad (Pakistan). Academy of Educational Planning and Management.
REPORT NO ISBN-969-444-066-1
PUB DATE Aug 91
NOTE 108p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS College Programs; Developing Nations; Educational Improvement; *Educational Needs; *Education Work Relationship; *Employment Potential; Foreign Countries; Graduate Surveys; Higher Education; Job Skills; Labor Market; Labor Needs; *Outcomes of Education; Postsecondary Education; Program Effectiveness; Program Improvement; *Relevance (Education); Technical Education; *Technical Institutes
IDENTIFIERS *Pakistan

ABSTRACT

A study was made of the 36 polytechnic institutions in Pakistan in order to describe the nature of their academic programs and their relevance to the job market. Responses to questionnaires were received from 545 of 1,000 graduates, 34 of 36 principals of institutions, and 25 employers of the 184 graduates who were employed. Some of the findings of the study were the following: (1) about half the graduates of the 1985-87 session were unemployed, 34 percent were paid employees, and 14 percent were self-employed; (2) job opportunities are more favorable for urban students, with 50 percent of the 184 employed being from rural areas; (3) the highest rate of employment was in the government sector, followed by the private sector; (4) it usually takes 3 months to 1 year for a graduate to find an appropriate full-time job; (5) institutions usually do not help graduates find employment; (6) institution heads complained that content was not meeting the demands of the job market and that equipment was outdated; and (7) institution heads recommended introduction of computer technology and other new technologies. Recommendations were made for a needs analysis to determine what skills the job market needs, staff development, and increased institutional efficiency. (The report contains 40 tables; appendixes include a list of the technical institutes in Pakistan and the questionnaires.) (KC)

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TECHNICAL EDUCATION – ITS RELEVANCE TO JOB MARKET

(A Research Report)

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CE 060 735

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August 1991

BEST COPY AVAILABLE

Cataloguing in Publication Data
Main entry under author :

Khawaja, Sarfraz

Technical Education: its relevance to job market/by Sarfraz Khawaja, M. Nasim Qaisrani and M. Aslam Bhatti. (AEPAM research study; no. 90)

1. Technical education-Economic aspects 2. Vocational educational-Planning I. Title II. Nasim Qaisrani, M. II. Bhatti, M. Aslam III. Series

370.113

ISBN : 969-444-066-1
607.5491

(AEPAM Research Study; no. 90)

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EXECUTIVE SUMMARY

Technical education in its present form started in Pakistan about 34 years ago when for the first-time, two polytechnic institutions were established one each in Lahore and Rawalpindi in 1955. As a result of continuous efforts undertaken onward since 1955, at present 36 polytechnic institutions are working in the country, which include 15 in Punjab, 13 in Sindh, one in Baluchistan, six in NWFP and one under the jurisdiction of the federal government. These also include seven institutions for women, i.e. three in Punjab, two in Sind and one each in NWFP and Islamabad. These institutes had enrolment of 12,126 students out of which 11,579 were male students and 547 were female students in 1985-86. The total number of teachers were 1020 out of which 949 were males and 71 were females.[1] These institutions offer diploma level programmes of three years duration in different technologies. The present study attempts to describe the nature of the Academic programmes offered in these institutions and their relevance to job market.

The specific objectives of the study are as under :

1. To find out the employment status of the students graduated during 1985-86.
2. To compare the ratio of technical manpower in various technologies/trades.
3. To examine the relevancy and quality of manpower produced from the employer's point of view.

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1. Statistics on Technical Education, 1983-84 to 1985-86, Ministry of Education, Central Bureau of Education, Islamabad. 1987.

4. To find out the future needs of the country in various technologies.

5. To create a data base for tracer study on various aspects of technical education in Pakistan.

The sample consisted of 545 graduates, 34 Principlas of institutions and 25 employers of different organizations. The sample was drawn on stratified basis and represented all the four provinces.

The study was conducted on National level. The data was collected through questionnaires. Three questionnaires one for the graduates of technical/polytechnic institutes, second for the institutional heads and third for the employer of these graduates were developed.

It was found that:

1. 50.6% of the graduates of 1985-87 session were unemployed as on May, 1988 (when this information was collected). Where as 34% were paid employee and 14% were self employed, 1.3% did not respond. In NWFP the ratio between employed and unemployed was equal while the number of unemployed in Punjab was two times and in Sind was three times. In AJK and Baluchistan the number of unemployed is less than the employed which shows absorption of technical graduates.

2. The job opportunities are more in favour of urban students than rural students. Out of 184 employed, 50% were from urban areas and 36% were from rural areas, while 8% did not respond. More over, majority of the self employed also belonged to urban areas.

3. The rate of employment is slightly higher in Government and Semi-Government organizations followed by private sector. In the province of Sind, more people were employed in private sector than in the public sector.

4. Usually it takes 3 months to one year to secure the full time appropriate job.

5. Usually the institutions do not help/guide their graduate to secure employment.

6. Most of the institutions offer programs in electrical (41.2%), civil (20.6%), mechanical (35.3%) and electronics (29.4%) technologies.

7. Most of institutions are suffering from problems of inadequate, library and laboratory facilities.

8. There are better job opportunities in the field of electrical, mechanical and electronics.

9. Majority of institutional heads complained that contents/subject matter/practical work etc., of various technologies were not meeting the demands of the job market.

10. Majority of institutional heads were of the view that computer technology, electronic technology, fuel/petro chemical technology and agriculture/food technology, be introduced in the country.

11. Employer recruit technical staff through news paper advertisement (83%), educational institutions (24%), employment exchanges (16%) and through personal contents (20%).

12. Majority of the organizations also provide opportunities to this technical employment for promotion (88%), training on job (65%) and professional advancement (60%).

13. Majority of the employers were of the view that better facilities be provided, more emphasis be laid on practicals/field work/internship programmes etc., for the improvement of the competencies of technical employers.

14. Employers also recommended introduction of new technologies in polytechnic institutes.

RECOMMENDATIONS:

General Recommendations:

Some of the important aspects of planning Technical Education at all levels were identified to be as under:-

1. The expansion and modifications of programmes should be affected on the basis of a reliable manpower information system capable of collecting, storage, updating, retrieval and analysis of information on employment opportunies.

2. Selected institutions (Universities, Colleges of Technology/Commercial Institutes/Vocational Institutions) should act as focal points to identify problems of community and promote transfer of know-how and technology, help in mounting special purpose surveys and studies and undertake community development tasks.

3. All educational institutions catering to the development of technical and professional manpower should endeavour to increase the efficiency and effectiveness of their programmes by systematic improvements in managerial processes through use of modern management techniques.

4. Staff development for staff of all categories needs to be designed and administered on systematic basis for content up-dating, pedagogical skills and industrial exposure. Relevant management training should be integrated in such a programmes.

5. Institutions should be required to collaborate with employers organisations/industries on systematic basis and modality of cooperation clearly identified and formalised. Such modalities may involve sharing of staff and facilities, participation of employers in governance, administration and evaluation of institutions, providing work experience to staff and students, using institutional staff for consultancy work and problem solving, mounting joint research and developmental activities, organising seminars/ conferences on topical issues etc. Institutions be encouraged to set up consultancy services.

6. Learning Resource Centres be established in selected institutions to develop, test and promote use of multimedia teaching learning resources for enhancing the learning achievements of students and overcoming textual material shortages.

7. The evaluation of students should emphasise more the learning of practical skills and acquisition of proficiency for analysing the actual problems of production/development.

8. The tasks of planning and organising technical education from the craftsmen level to that of engineers/technoligists levels, should be coordinated by a single agency at the national level, to ensure balanced development through an integrated approach.

9. Institution and Programmes Evaluation need to be systematically designed and implemented through development of performance indicators and training of evaluators in the use of various evaluation models.

10. Curriculum Research should be institutionalised and integrated with the analysis of employment market and job-opportunities.

11. Examination system should be backed by intense research/surveys/studies, training of evaluators, test-item banking, model question papers and marking techniques, and involvement of users.

12. A variety of Continuing Eduation programmes be introduced at all levels for serving personnel through flexible, various levels should be integrated logically to allow for upgradation of competent students. A Credit System with provision for multi-point entry in part-time and full time programmes should be introduced.

13. Administrative and academic autonomy be given to selected institutions by bringing them under suitable governing bodies.

(b) Specific Recommendations:

1. At present the share of female students in technical education is very low i.e. about 5% as compared to male students, they have the some level of unemployment as men. As the Government of Pakistan intends to increase the share of women in labor force, women will have more

job opportunities. Therefore, it is, recommended that female participation rate be gradually raised to 25% during the Seventh Five Year Plan.

It is also pointed out that the existing women institutions are working upto maximum optimal level.

Therefore, women should be given special incentives to enroll themselves in these institutions.

2. The employers have shown their dissatisfaction with the quality of training/skills possessed by graduates. Therefore, present curriculum be evaluated and updated. More emphasis be given laid on practicals/field work, internships etc.

3. Most of the institutions are suffering from problems of inadequate staffing, workshops, libraries and laboratories. Therefore these problems be paid immediate attention in oder to improve the quality of education in polytechnics, institutes.

4. The new emerging fields should be introduced in Polytechnics/Colleges of Technology. These include computers (hardware & software). Micro-processors, oil, gas and petro chemical, rubber, leather, instrumentation, rural development, industrial design, town planning, ship building, aeronautical, telecommunications, catering and hotel management, bio-medical technology, mining and metallurgy, woold technology, food technology, hair dressing beautician and cosmetics, printing and graphic arts.

5. Low cost books should be produced for technical education by National Book Foundation.

6. Rental Libraries and Book Banks be established in Polytechnic Institutes.

7. A National Textbook Board for Technical Education should be established which would develop print and distribute textbooks for Polytechnics, Commercial Institutes and Vocational Institutes.

8. Learning Resource Centres should be established in selected Polytechnic Institutes to produce multi-media packages for Teaching Learning Resources under overall supervision of the Text Book Board for Technical Education.

9. Systematic Training programmes should be mounted to impart skills amongst various teachers for local development of learning resources.

10. Private sector/employers should be emerged to provide financial resources for the researches to be carried out in the Polytechnics. A strong linkages should be established between the Polytechnics and Industrial sector.

11. Necessary physical facilities with major emphasis on libraries and laboratories should be provided to each Polyttechnic Institute.

12. The curriculum and content of the Polytechnique Institute should meet the need of job market. This will generate more job opportunities.

CHAPTER NO. I

TECHNICAL EDUCATION IN PAKISTAN

Introduction:

The development of a sizeable infrastructure for technical education at various levels in Pakistan stemmed from the recognition that human resources development stands along with physical capital and technological progress as a powerful and indispensable means of achieving development. Education and training determine to a large part the extent, pace and direction of its development. Technical manpower is an important segment of the manpower spectrum required to execute and sustain development in all its important facets and plays a significant role in various fields such as industry, agriculture, business, public works, health, scientific research, education, etc.

As per Unesco's recommendations there are three basic categories of manpower which are defined as under:

1) the term 'engineer' or 'technologist' applies to persons working in occupations for which the need of education in appropriate sciences in universities or equivalent institutions of higher education is officially or traditionally recognised; this level of occupations would cover such activities as research, development, organisation, planning and production;

2) the term 'technician' applies to persons working in occupations required knowledge of technology and related sciences between that of a skilled workers and that of an engineer or technologist; occupations at the technician's level may call for inspection and maintenance, detailed development plans, supervision of production work, detail construction. Collaboration with the engineer is an essential part of the work of the technician;

3) the term 'skilled worker' applies to persons who have received a broad education and training in the exercise of a trade or craft in a particular field;

In Pakistan, it may be useful to recognise the following organisational stages:

(i) Professional Level

i.e. Degree programmes in engineering, administered by Engineering Colleges and Universities

(ii) Mid-Professional (Diploma) Level

This level is equivalent to the higher secondary stage where Diploma level technical/vocational education is administered in institutions such as Polytecynics, Colleges/Institutes of Technology, etc., offering Post-matric 3 years course in various technologies. The out-put from these institutions is expected to fill positions of supervisory level in industrial establishments/technical services etc. Additionally, Commercial Institutes, also fall in this category which offer post-matric Diploma Courses in commercial subjects such as accountancy, secretarial practices, book keeping, etc.

(iii) Craftsmen Level

This concerns that training needs of skilled workers at the level of operators (carpenters, masons, machinists, welders, electricians etc.) A variety of institutions offering post-middle and post-matric courses under different ministries/provincial departments are operating with courses of varying contents, durations and objectives. Quite a few vocational schools offer courses for girls.

(iv) Pre-Vocational Levels

This level may be construed to encompass all such courses which have been introduced below matric level in various general education institutions with a view to aquainting the students with elementary Vocational Skills in middle and high schools of Pakistan.

Policy Efforts:

When Pakistan came into existence in 1947 there were very limited technical education facilities available in this part of the sub-continent. Inspite of tremendous social, political and economic difficulties at that time, the Government of Pakistan paid immediate attention to this vital sector of national education development. During the commencement of first National Education

Conference organized few months after the attainment of independence, Quaid-i-Azam, Mohammad Ali Jinnah, the founder of the nation in his message urged the Conference participants to remember:

> "Education does not merely mean academic education. There is an immediate and urgent need for giving scientific and technical education to our people in order to build up our future economic life and to see that our people take to science, commerce, trade, and particularly to well planned industries. We should not forget that we have to compete with the world which is moving very fast in this direction."(1)

The conference deliberated for 3 days and recommended the setting up of a Council to look into the affairs of Technical Education and develop a plan of action of various levels and categories for future development of technical education in Pakistan. This council was established in June 1948.

The council recommended the establishment of polytechnic institutes. The objectives of these institutes include the following:

1. To help one prepare immediate gainful employment.
2. To help one develop the best of his abilities in technical skills.
3. To help one develop social skills and competencies.
4. To help one develop industrial work habits.
5. To help one develop interest and appreciation of the industrial proceseses concerned with planning, production, operation and design.(2)

In order to achieve these objectives, the committee recommended the poly-technics as the best types of institutes for training this category of personnel, which should be established at the earliest possible opportunity. It was suggested that Polytechnics would impart technical education up to diploma standards in various branches of engineering and technologies depending upon the type of industries existing and contemplated in particular region. The type of training was not to be general in character, but of a particular type, so that students will be prepared for a particular level of employment in the industry on entry. The standards of teaching may be gradually raised from diploma to the degree level if the circumstances require. Boys completing secondary education from technical high schools should be admitted to these courses untill a sufficient number of technical high schools are established. The course in general should be of three years duration with one year compulsory practical training in an industrial concern."

Technical Education Committee appointed by the Council of Technical Education made a survey in 1950 and recommended:

> "(a) Technical education should be treated as an integral part of the educational system. (b) Technical high schools should be established in order to introduce a technical bias in secondary education for enabling student to select courses of studies best suited to their aptitudes. Such technical high schools would be of three categories: (i) with an engineering bias; (ii) with a commercial bias; and (iii) with an agricultural bias. (c) In order to produce supervisory personnel for industry, polytechnics should be established as early as possible. (d) To meet the requiremetns for skilled workers the institutions like trade schools and

artesan schools should be provided (e) Directorates of Technical Education should be responsible for the control and development of technical education, etc."(3)

The report of the Technical Education Committee emphasized:

"In formulating any scheme for technical education, general education must form the foundation and in imparting it, the teaching of handicarafts along with the cultural subjects in the basic stages is essential. Vocational education must be so planned as to receive increasing attention, not merely because of its importance in the economic life of a nation, but as a discipline and factor of value in social and cultural development."

The report explained: "It is not the intention to make the students specialize in any particular trade or branch of industry. The genral character of education is proposed to be kept intact."(4)

The recommendations of the Council on Technical Education were also considered in the program of First Five Year Plan (1955-60) which observed:

("No organized system of technical education was in effect in 1947; the situation has changed since then. According to the recommendation of the Council of Technical Education, two Technical High Schools were opened, one in Karachi and other in Dacca. Preparation of the plans of two polytechnic institutions, one at Karachi and other at Dacca, was begun in 1953. These institutions made their first admissions in 1955. In addition, an increasing but undetermined number of non-standardized trade, technical and vocational schools had been springing up.") (5)

This plan recommended the allocation of Rs.27.6 million for the development of technical education in the country. The plan could not be implemented fully because of different constraints. However, two polytechnics, one in Rawalpindi and the other in Lahore were established during this period.

Commission on National Education, 1959:

The commission on national education was appointed in December 1959. The terms of reference of this commission included all aspects of primary education, secondary education, college education, university education and technical and professional education. The commission was specifically asked to consider the role of education in the national social and economic development. On the subject of technical education, the commission observed:

> "Education should be viewed as productive activity and as an investment in human resources essential for the development of a progressive and prosperous welfare state....." the commission further observed "We are convinced that one of the missing element which has partially accounted for our failure to accomplish these plans has been insufficient attention paid to the training of scientific personnel and the large body of technicians vocationally skilled workers necessary for practical applications of the advanced work of the scientists and engineers."(6)

The commission made a number of recommendations in the field of technical and vocational education. Some of the relevant sections of recommendations are reproduced here.

1. A net work of vocational schools should be established throughout the country with the aim of training students who have normal skill and who show aptitude for craft work. The existing trade and industrial schools should be remodeled on the pattern of vocational schools.

2. All polytechnic and technical institutes should offer evening and part time courses as a regular feature of their program. The range of courses should be designed to meet the special requirements of local industry and small employers.

3. Arrangements should be made during the next five years to set up more technical institutes for producing 7,000 technicians in various fields.

The recommendations of the commission were incorporated in the second and third five year national development plans during 1960-70. The second five year plan (1960-65) proposed the establishment of 7 new polytechnic institutes and to raise the out put from then existing 432 to 1275 per year during the plan period which targets were completely and fully achieved. An other development during this period was emergence of private technical institutes. Though it was small in size, it was remarkable to have private sector's participation in technical education.

During the third five year plan (1965-70), major emphasis was on consolidation and expansion of curriculum in the existing technical institutes. It was also proposed that by 1970 the annual in take capacity would be raised to 7,000. For this purpose, expansion schemes were proposed in the then existing nine polytechnics. Twelve new polytechnics and an institute of graphic arts were also proposed to be set up during the plan period.

New Education Policy 1969:

A number of study groups were set up by the Federal Government as well as by the Provincial Governments to make a proposal for the New Education Policy on the subject of technical education, the new policy observed:

> "Although great emphasis had been laid on the development on Technical and Vocational Education both in the Second and the Third Five-year Plans and the Commission on National Education had also emphasised the importance of investment in the sector of Vocational and Technical Education, it has never been integrated into the over-all pattern of education and has remained as a disjointed activity. The result is that the total enrolment in the Technical and Vocational Institutions in West Pakistan was about 8,000 and in East Pakistan about 3,500 in the year 1968. The neglect of Technical and Vocational Education in the country has been clossal."(7)

For the promotion of Technical and Vocational Education, the following administrative and structural changes were recommended:-

(i) In each province there should be a separate Directorate of Vocational and Technical Education headed by a Director-General. This directorate should operate through the District School Authorities in regard to the vocational and technical content of secondary education, and through the vocational and technical content of secondary education and through the Regional/ Divisional College Authorities so far as the Technical College are concerned.

(ii) In the stream of Technical and Vocational Education there should be two sub-streams, one for the Agricultural Vocation and the other for the Industrial Vocation. Each of them will have schools

and colleges (Tech.) and B.Sc. (Tech.). The schools will have two-year courses and the colleges will have four-year courses providing for training for two years after Matric (Tech.) examination and another two years after Inter (Tech). Diploma examination.

(iii) In order to encourage students to join the Vocational and Technical Schools and Colleges 75% of scholarships given by Provincial and Central Governments should be available only for students in these Institutions.

(iv) During the course of training in the Technical Colleges, students should be required to complete two years apprenticeship in a recognised Industry under a Law which should be enacted for this purpose. During the period of apprenticeship training the students should be paid a prescribed Apprenticeship Allowance by the industries concerned.

(v) A Committee should be appointed by the Central Government consisting of the representatives of the Ministries of Education, Labour and Industries, to examine ways and means by which Industries in the private and public sectors should be required to employ only those technical personnel who have obtained a Certificate, Diploma or a Degree from a Vocational and Technical Educational Institution set up under the new Policy. The existing unsatisfactory situation in which such training is the overlapping responsibility of these Ministries should be resolved."(8)

Education Policy 1972-80:

In 1971, with the change of political administration in the country, a new policy was formulated.

The major recommendations of the education policy -(1972-80) regarding technical and vocational education in Pakistan were as under :

1. Designing curricula relevant to the nation's changing social and economic needs compatible with our basic ideology and providing a massive shift

from general education to more purposeful agro-technical education.

2. Providing a comprehensive program of studies through the integration of general and technical education and by keeping options open for transfer from one course of study to another.(9)

In order to achieve these objective, the policy recommended the following measures:

1. Upgradation of technician training program from diploma to degree level.
2. Massive shift from general to agro-technical education.
3. Vocationalization of secondary school programmes.
4. Nationalization of private educational institutions.

Other non-formal education programmes recommended by this policy included: education of factory workers and vocational training through mass media of the Open University.

The policy also took cognizance of the need of practical training for students of technical colleges. It recommended appropriate legislation for providing such training.

National Education Policy (1979)

In 1978, the Government of Pakistan announced the National Education Policy. The main stress of this policy currently under practice is on the enrichment of ideological contents of education at all levels. The policy also aimed at

promoting and strengthening scientific, vocational and technical training and research and to use this knowledge for socio-economic growth and development thereby ensuring self-reliance and secure future for the nation. In the field of technical and vocational education, the policy laid more emphasis on closer co-operation between industry and technical education institutions and establishment of production wings in the technical institutes. Orientation of technical education with job requirements is considered an important aspect..... A teacher's training college for the training of teachers and vocational institutes was also planned to be established which is now functioning in Islamabad. Other recommendations of the policy included (i) suitable legislation for providing on the job supervised practical training for diploma and B.Tech students (ii) establishment of skill schools for the training of school drop-outs (iii) The development of teaching/learning resource material.(11)

The recommendations of this policy were incorporated into fifth and sixth five year plan (1978-88). The fifth plan (1978-83) gave highest priority to the improvement of existing poly-technics and to make the training more relevant to job requirements. The plan also envisaged that the out put of diploma holding technicians will increase from 3500 to 4925 per annum.(11) The sixth five year plan 1983-88 placed high priority on the development of training programmes of all categories of trained manpower both in quality and size.(12)

Present Status:

As a result of continuous efforts undertaken by the successive governments during the past 40 years. There has been considerable growth in the field of Technical Education in Pakistan. Table-I & II presents the statistics on the development of technical education in Pakistan.

TABLE - I

STATISTICS OF ENGINEERING/TECHNICAL/VOCATIONAL EDUCATION (ESTIMATES FOR 1985-86)

Level	No. of Institutions	Intake	Enrolment	Out put	Remarks
(1) Universities/ Colleges.	7				
B.Sc.Engg.		3400	15000	2600	
M.Sc.Engg.			850	30	
Ph.D.		Negligible	Negligible	Negligible	
(2) Colleges of Technology	9				
Diploma		3600	9300	1800	
B.Tech		660	1300	262	
(3) Polytechnics (Males)	19				
Diploma		4230	8200	2300	
Polytechnics (Females)	7				
Diploma		700	1100	300	
(4) Commerce Colleges (Public Sector)	13	1600	3000	1200	

(5) Commercial Institutions (Public Sector)	70	6500	10000	4500
(6) Vocational Institutes(Males) (Under Education Departments)	15	2000	4000	1600
(7) Vocational Institutes (Females)	131	6500	7500	5500
(8) TTC/Vocational Institutes (Under Labour Department)	44	-	-	14000
(9) Apprenticeship Programmes	425 (Establishment)	-	-	2000
(10) Skill Training in Establishments outside apprentice Training Programme	10	-	-	4000
(11) Ustad-Shagird (Informal Training)	Not.known	-	-	20000
(12) Semi-Skilled Workers (Small Indurtries, OPF, ABAD, private institutions, evening programmes.				40000
(13) Semi-Skilled Workers from Ustad-Shagird system		-	-	20000

ABSTRACT OF OUTPUT
(ESTIMATES FOR 1985-86)

A) **ENGINEERING:**

i)	B.Sc. (Engineering)	2600
ii)	M.Sc. (Engineering)	30
iii)	Post Grad.	Negligible

B) **TECHNOLOGY:**

i)	B.Tech	262
ii)	Diploma of Associate Engineers	4100 (Male) 300 (Female)

C) **COMMERCE:**

	Public Sector	Private Sector
i) Degree	120	4000
ii) Diploma	3500	10000
iii) Certificate	1000	5000

D) **VOCATIONAL (MALE)**

i) Skilled	41600	Based on Ministry of Labour Estimates.
ii) Semi-skilled	60000	

E) **VOCATIONAL (FEMALES)**

6000

TABLE - II

PROGRESS DURING VARIOUS PLAN PERIODS

Level/Type	1960-65 I Plan	1965-70 II Plan	1970-75 III Plan	1970-78 IV Plan	1978-83 V Plan
I. Engineering Degree					
No. of institutions.	3	3+1 (Univ.)	5+1 (Univ.)	3+3 (Univ.)	2+4 (Univ.)
Intake (B.Sc.Engg)	430	603	1500	2621	3650
Enrolment	1251	1632	3800	9500	12800
Output	304	453	1254	1700	2360
II. Diploma Level					
Polytechnics/ Colleges	4	10	14	28	34
Intalke	-	2100	3500	5271	5950
Enrolment	722	5846	7800	13100	17320
Output	430	2100	2500	3550	397
III. Vocational Certificate*					
Number					
Intake					
Enrolment					
Output					

* Only under Education Departments. Vocational Courses offered by other departments/agencies have not been reflected in these figures.

ACHIEVEMENT DURING SIXTH PLAN

During the Sixth Five Year Plan (1983-88), the achievement vis-a-vis stipulated targets could be ascertained from the following:

S.No.	Institutions to be established	Target (Additional)	Achieved (1986-87)	Remarks
1.	College of Engineering, Multan.	1	-	
2.	Polytechnics	19	9	
3.	Monotechnics	10	2	
4.	Commercial Institutes	30	3	Government of the Punjab has announced the establishment of 35 Commercial Institutes & 30 Vocational Insstitutes (for girls) w.e.f. the year 1986-87.
5.	Vocational Institutes/Trade schools (under Education (Department)	278	55	
6.	National Technical Teachers Training College (NTTTC)	1	1	
7.	Strengthening of Polytechnics with the help of Asian Development Bank (Phase-I Project)	11	11	
8.	Provision of facilities for Khuzdar Engineering College.	1	In process	
9.	Provision of facilities for NWFP University of Engineering & Technology.	1	In process	

Some Problems and Issues:

Some of the problems and issues which have been confronting the technical education at all levels in Pakistan could be briefly idntified as under:-

1. The demand for technical education arises in most part from production sectors and therefore should be planned in relation to national socio-economic development needs. Most of the plans of technical/ vocational education have been conceived without due analysis of employment situations and changing patterns of skills and competencies required as a consequence of changing technologies, products and management techniques. This has resulted in imbalanced development of various levels, higher levels comparatively expanding faster than lower levels as well as mismatch between output and employment market.

2. The relevancy of the curriculum has often been questioned as it did not reflect the objective realities of the various developmental tasks. In many situations the curricula had been based on borrowed models with relatively more emphasis on theoratical studies and less on the solution of problems peculiar to Pakistan conditions.

3. The managerial structures and processes, whether system-wide or institution-based have primarily remained unaltered and in the main centralised and outdated. They fail to promote the use of tools and techniques of modern management aimed at maximization of resources, increasing the productivity and efficiency of the system and maintaining effective relevancy with the environment.

4. The staff development for various levels of technical education has not been systematically planned with the result that many of the teachers/institutions do not possess requisite pedagogical skills and competencies to communicate effectively and raise the achievement levels of their students.

5. The need for collaboration and more intensive interaction between the employers organisations and institution is much more pronounced for technical education. Unfortunately the institutions have

displayed a good deal of isolation from the employers organisation/industry resulting in limited interest by the employers/ users in design and implementation of curriculum/programmes and sharing of resources.

6. The problem of teaching - learning resources/ textbooks is acutely felt at all levels and major reliance is placed on imported textbooks which are expensive, not easily available and often beyond the curriculum needs of students particularly at the technician and craftsman level.

7. The current examination and evaluation practices put minimal premium on the practical proficiency and skills of students. Coupled with this are the comparatively low budgets for practical training and equipment for consumable lab/shop work. This situation adversely effects the quality of practical proficiency of the graduates and attracts lot of criticism from the employers.

8. At present, technical education is planned, supervised and adminisered by a number of federal and provincial governmental agencies. Ministry of Labour and Manpower, Provincial Departments of general education, technical education, labour and manpower, industries, provincial Board of Technical Education, University Grants Commission, Pakistan Engineering Council, etc. deal with one or other aspect of technical/vocational education. Effective mechanisms do not exist for integrated plicy planning and co-ordination to ensure that efforts made by different provincial and federal agencies are channelised towards meeting the critical manpower demands of various sectors. This has posed serious problems in areas of coordina-tion, standard setting, testing and evaluation, teachers qualification, and staff development, rationalised recruitment procedures and above all effective monitoring and feed back.

9. Currently all over the world substantial literature has been generated to devise models and procedures for systematic institution and pro-gramme evaluation which are much broader and comprehensive than mere students' evaluations. In Pakistan no comprehensive evaluations which are basically management functions, have been designed and introduced in the education system and many improvement interventions remain uninitiated. This perhaps is one of the major

causes of low productivity and low efficiency of our educational institutions and systems.

10. Curriculum planning and development is normally undertaken through adhoc committees and is not backed by indepth surveys and studies. In many situations the curriculum prescribed emerges as patchwork, imbalanced and betrays lack of logical sequencing and rational build up of achievement level.

11. Examination and Evaluation of students is the weakest link in the chain as its effectiveness and reliability determines to a large extent what goes on in the class room. A faculty system of examinations will naturally result in selective studies by the students, low coverage of course contents, emephasis on role learning, subjective marking and injustice to capable students. Unfortunately this area has not undergone significant improvements.

12. The current educational streams are mainly water-tight and do not allow either transfer at appropriate points or multiple entry points being basically rigid in character. Opportunities of continuing education of various technical personnel are also not adequately available because of the inflexible nature of the programmes. In many countries, intakes to higher levels of technical training programmes is taken from output of lower technical training institutions. For examples, craftsmen training institutions inducting students from schools with technical courses (comprehensive schools); technician institutions admitting trained craftsmen and engineering colleges taking technicians with aceptable academic achievement. In this way streams from lower to higher levels can be integrated and a competent technical hand may not find himself bogged down for ever in low grade positions, eventually loosing sense of achievement and ending up in frustration.

13. Financial and administrative powers available to various functionaries and principals of institutions are not commensurate with nature of activities envisaged in technical training programmes such as making changes in programmes to cope with changing occupational demands, maintain-ing working relationship with industries, staff recruitment, flexibility in material procurement etc.

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CHAPTER-II

METHODOLOGY

I. Objectives of the Study:

This study was undertaken to criticially understand and analysed the situation of technical education in Pakistan and the employability of the graduates from the colleges of technology and the polytechnics. The specific objectives of the study were as under :-

i) To find out the employment status of the students graduated during 1985-86.

ii) To compare the ratio of Technical manpower product in various technologies/trades.

iii) To examine the relevancy and quality of manpower produced from the emplmoyer's point of view.

iv) To find out the future needs of the country in various technologies.

v) To create a data base for tracer study on various aspects of Technical Education in Pakistan.

II. Population and Sampling:

1. There are at present 36 colleges of technology/ polytechnic institutes in the country. In accordance with the principles of stratified random sampling, 13 polytechnics/ college of technology were taken as sample. The sample represented male-female institutions and all the provinces including federal area of Islamabad. The heads of the sample institutions were approached to

provide the necessary records for the graduates of 1985-87. A list of 1000 graduates was provided.

2. Questionnaire A was mailed to those graduates (who graduated during 1985-87).

3. All the institutional heads of polytechnics institutes and colleges of technology were included in the sample.

4. 25 employers of these graduates were contacted.

III. Instruments:

Three types of questionnaires were developed for this study i.e. one for the graduates, second for the institutional heads and the third for the employers of these graduates. Questionnaire-A was addressed to the students. This consisted of 19 questions. The main purpose of these questions was to know in what technology they specialized, how did they get their jobs, their level of satisfaction with their studies and the jobs. They were also asked to give suggestion for the improvement of technical education in Pakistan.

The second questionnaire was addressed to the heads of the institutions for seeking information about (a) Various technologies offered in these institutions; (b) the library/laboratory facilities; (c) provision of guidance/ councelling facilities for helping the students getting the job and also to know what problems were faced by them in effectively running these institutions?

The third questionnaire was addressed to different organizations employing these students and consisted of 13 questions. In this questionnaire basically three types of informations were sought: (i) the quality of the product of technical institutions, (ii) future technical requirements of their organizations and (iii) What suggestions they would like to give for the improvement of technical education in Pakistan. A copy of these questionnaires is annexed.

IV. Data Collection:

All information was collected through correspondence. Repeated reminders were sent to defaulting respondents. The following information was received :

(a) 545 responses out of 1000 technical graduates.

(b) Responses from 34 institutional heads out of 36.

(c) 25 Responses from different organizations employing these students.

It should be further clarified that a due date was given to every respondent. Data received after the specific date was not included in the study.

V. Data Analysis:

All the information received were coded and entered into the computer in consultation with the Division of Management Information System of the Academy. Statistical techniques such as ratios, average and percentages were used to analyse the data.

CHAPTER-III

PRESENTATION AND ANALYSIS OF DATA

The present study on technical education-its relevance to job market was carried out to know the absorptive capacity of technical graduates in various organizations and to see the relevance of this education with the requirements of the job market. The main sources of data were the responses received from technical graduates, institutional heads and the employers of graduates through three different questionnaires.

Questionnaire-A was for the technical graduates, questionnaire-B for the institutional heads, and questionnaire-C for the employers of these graduates.

Analysis of Graduate's Questionnaire:

Questionnaire-A, for technical graduates consisted of 19 questions. Question No. 1 and 2 were asked to seek basic information from the respondents such as their name, mailing address, place of residence etc. Question No.3 was asked to know the age of the respondent. There were 545 respondents in all.

Question No.4 was asked to know the academic/ professional qualifications of the respondants before joining the technical institutes, year of passing/division in Matric and Diploma and field of sepcialization. Table-1, presents the divisions of graduates in the Matriculation examination and also in the Polytechnic.

Table-1

ACADEMIC RECORDS (DIVISION/GRADE) OF THE POLYTECHNIC GRADUATES

	DIVISION				
QUALIFICATION	I	II	III	No Response	TOTAL
Matric	328	182	27	8	545
Percentage	60.2%	33.4%	5.0%	1.5%	100%
Diploma	354	174	4	13	545
Percentage	65%	31.9%	.7%	2.4%	100%

As the table indicates that 60% of the students admitted into technical institutes hold first Division, 33% second division, and 5% third division in their matriculation examination. While in the Diploma examination 65% were placed in the Ist division, 31.9% in 2nd division and 0.7% in 3rd division while 2.4% did not provide this information. This table shows that the majority of the students had good academic records in Matric and Diploma examinations.

Table 2

SUBJECTS/GROUPWISE DISTRIBUTION OF STUDENTS

SUBJECTS	SCIENCE	HUMANITIES	NO RESPONSE	TOTAL
Subjects	490	14	41	545
Percentage	89.9%	2.6%	7.5%	100%

This means that a large number of students approximately 90% offered science subjects during their high school programme.

Question No. 5: This question was asked to know the Place of Domicile of graduates. Table-3 indicates place of domicile of the students with respect to province and rural-urban.

Table-3

PLACE OF DOMICILE OF POLYTECHNIC GRADUATES (1985-87)

PROVINCE/AREA	RURAL	URBAN	NO RESPONSE	TOTAL
Punjab	59	109	10	178
Sind	77	134	16	227
NWFP	66	23	11	100
Baluchistan	8	14	3	25
Islamabad	2	2	1	5
AJK	6	2	0	8
Northern Areas	1	0	0	1
Total	219	284	41	544
Percentage	(40.3%)	(52.2%)	(7.5%)	100%

As the table shows the majority of graduates i.e. 52.2% who got admissions in technical courses were urban domiciled and 40.3% belonged to rural areas. The table also presents province-wise rural urban distribution of respondents.

Question No. 6 was designed to know the occupation of the parents/guardians of the graduates. The purpose was to know the affect of parent's occupation on their children's professional aspiration.

Table-4

OCCUPATIONS OF PARENTS/GUARDIANS OF GRADUATES

PROVINCE/ AREA	GOVT. SERVICE	SEMI-GOVT. SERVICE	PRIVATE SERVICE	OWN BUSINESS	AGRICUL-CULTURE	SELF	ANY OTHER	NR*
Punjab	52	10	30	45	23	10	2	15
Sind	81	15	36	45	19	10	3	15
NWFP	22	4	5	18	34	5	3	7
Baluchistan	13	2	1	2	4	1	1	1
Islamabad	2	1	0	0	0	0	0	1
AJK	3	0	1	1	1	0	0	0
Northern Areas	0	0	0	0	1	0	0	0
Total	173	32	73	111	82	26	9	39
Percentage	31.7%	5.9%	13.4%	20.4%	15.0%	4.8%	1.7%	7.2% -

*NR = No Response

This table shows that parents of 32% graduates were in government service; 20% have their own business; 15% were involved in Agriculture, 13% were employed in private services and 6% in Semi-Government Service, 5% self and 7% did not respond. It is evident from this table that parents who are either in government service or have their own business are more intended to send their childrens to the technical institutions, while semi-govt., personnels are less interested i.e. only 6%.

If we see this table from an other angle, in Punjab out of 185 total, parents of the 52 of students were in government service, 30 in private service, 45 have their own business, 23 in agriculture, 10 each in semi-govt. service & self employed and 15

did not respond. While in the province of Sindh out of 224 total respondents, 81 were in government service, 36 in private service, 45 have their own business, 19 in agriculture, 15 in semi-govt. service, 10 self-employed and 15 did not respond. In NWFP out of 98 total respondents, 22 were in govt. service, 5 in private service, 18 their own business, 34 in agriculture, 4 in semi-govt. service, 5 self employed and 7 did not respond.

The trend for own business is more in Punjab and NWFP but trend in private service is preferred in sind due to industrial base of Karachi. It can also be concluded from this table that 50% parents of the total respondants were in government service.

Question No. 8 was asked to know the present employment status of the graduates of 1985-87.

Table-5

EMPLOYMENT STATUS OF GRADUATES OF 1985-87
(AS ON MAY 1988)

PROVINCE/AREA	EMPLOYED	UNEMPLOYED	SELF	NO RESPONSE
Punjab	47	78	31	1
Sind	45	144	31	4
NWFP	42	43	11	2
Baluchistan	13	8	4	0
Islamabad	2	2	0	0
AJK	4	1	1	0
Northern Areas	1	0	0	0
TOTAL	184	276	78	7
PERCENTAGE	33.8	50.6	14.3	1.3

This table shows that about 51% graduates of 1985-87 (session) were unemployed as on may, 1988 (when this information was supplied) whereas only 34% were paid employed and 14% were self employed. The ratio between employed and unemployed in NWFP and Islamabad was equal while the number of uneumployed in Punjab were two times and in Sindh were three times of employed. In AJK and Baluchistan the number of unemployed is less than the employed which shows absorption of technical graduates. However, it can also be argued that in those parts of the country the supply is imited. This table shows that one third respondants were employed.

Table-6

CROSS TABULATION OF QUESTION NO.8 & Q.NO.9

	EMPLOYED	UNEMPLOYED	SELF	NO RESPONSE
Government Servant	61	87	23	2
Semi Government	9	20	3	-
Private Service	31	36	6	-
Own business	36	52	22	1
Agriculture	32	35	14	1
Retired Servant	7	15	2	2
Any other	1	5	3	-
NO RESPONSE	7	26	5	1
TOTAL	184	276	78	7
PERCENTAGE	33.8	50.6	14.3	1.3

In this table two questions were crosstabed, i.e. regarding the occupation of the parents and present status of

employment. Table shows that 33.8% graduates were employed and 50.6% were unemployed whereas 14.3% had started their own business. The ratio between employed, unemployed and self-employed and the occupation of the parents had not much effect except in case of private service.

Table-7 presents the comparison of data on date of qualifying and getting first full-time employment.

Table-7

YEAR OF GRADUATION AND YEAR OF GETTING JOB

	BEFORE 1985	1985	1986	1987	AFTER 1988
Employed	8	42	42	91	1
Unemployed	10	46	69	147	4
Self employed	5	14	19	39	1
No Response	-	-	4	3	-
TOTAL	23	102	134	280	6

As the table indicates that 102 students had passed in 1985. Out of them 42 were employed 46 had no job what so ever and 14 were self-employed. In 1986, 134 graduated. Out of them 42 were employed, 19 were self employed and 109 were unemployed. In 1987, 280 students graduated. Out of them 91 were employed, 39 were self employed and 147 were unemployed.

Question No. 8 was also cross-tabulated with Diploma institution to see the affect of institution on employment.

Table-8

INSTITUTION-WISE LEVEL OF EMPLOYMENT

	EMPLOYED	UNEMPLOYED	SELF	N.R	TOTAL
No. Response	3	4	3	-	10
G.C.T. LAHORE	72	57	24	1	154
G.P.I. SAHIWAL	2	5	1	-	8
G.P.I. WOMEN LAHORE	2	10	1	-	13
G.P.I. WOMEN FAISALABAD	-	-	1	-	1
G.C.T. HYDERABAD	19	103	26	4	152
G.P.I. WOMEN SUKKUR	3	6	3	-	12
G.J.M.I. KARACHI.	7	17	1	-	25
G.P.I. WOMEN KARACHI.	11	17	2	-	30
G.C.T. PESHAWAR.	24	25	7	1	57
G.P.I. WOMEN PESHAWAR	7	3	-	-	10
G.P.I. HARIPUR	13	12	5	1	31
G.P.I. QUETTA	21	15	4	-	40
G.P.I. WOMEN ISLAMABAD	-	2	-	-	2
TOTAL	184	276	78	7	545
PERCENTAGE	33.8%	50.6%	14.3%	1.3%	100%

Note: G.C.T. = Government College of Technology.
G.P.I. = Government Polytechnic Institute.
G.J.M.I.T.= Government Jamia Millia Institute of Technology.

Table-8 shows the employment status of the graduates of different institutions selected in the sample. Cross tabulation of question No. 8 and question No. 5 indicate the affect on employment of rural-urban technical graduates. Government College of Technology Lahore, Government College of Technology Peshawar and Government Polytechnic Institute Quetta, shows better employment level as compare to others.

Table-9

RATIO OF EMPLOYED, UNEMPLOYED AND SELF-EMPLOYED

	EMPLOYED	UNEMPLOYED	SELF EMPLOYED	NO RESPONSE
Rural	78 (42)%	102 (36)%	34 (44)%	5%
Urban	92 (50)%	153 (55)%	37 (47)%	2%
No Response	14 (8) %	21 (9)%	7 (9)%	-
TOTAL	184	276	78	7
PERCENTAGE	33.8%	50.6%	14.3%	1.3%

From the Table-9 it is evident that out of 545 graduates 184 were employed. 50% were urban and 42% were rural while 8% did not respond. 276 were employed out of them 55% were urban and 36% were rural graduates. This table shows the ratio of rural-urban employed-unemployed graduates.

Question No.9-B was asked to know the year of completing the Diploma.

Table-10

YEAR OF COMPLETING TECHNICAL EDUCATION

TECHNOLOGY/DIPLOMA		NO RESPONSE	BEFORE 1985	1985	1986	1987	AFTER 1987	TOTAL
00	No Response	6	2	16	17	30	0	71(13)
01	Electrical	2	3	26	23	80	3	137(25)
02	Civil	0	1	16	16	39	0	72
03	Mechanical	0	1	21	29	71	2	24
04	Architecture	1	0	3	11	7	0	72
05	Drafting/Designing	0	1	0	0	0	0	1
07	Auto & Diesel	1	0	6	6	20	1	34
09	Glass & Ceramics	0	0	0	0	2	0	2
12	Refrigeration	0	0	1	1	11	0	13
13	Radio & T.V Elec:	2	0	5	13	20	0	40
18	Chemical	0	0	0	3	0	0	3
21	Tool Design	0	0	0	1	0	0	1
22	Commerce	0	3	3	2	0	0	8
23	Others	0	0	5	11	0	0	16
24	Garment	0	0	0	1	0	0	1
	TOTAL :	12	11	102	134	80	6	545

This table indicates that out of our 545 respondants 102 graduated in 1985; 134 in 1986 and 280 in 1987. Majority (25%) of these were graduated in electrical technologies.

Question No.10 was designed to know about the first full time job after graduation. The difference between Question No.8 and Question No.10 was the first full time job while in Question No.8 temporary jobs were also included.

Table-11
ORGANIZATION, FIELD OF SPECIALIZATION AND JOB PLACEMENT AFTER GRADUATION

AREA	NO RESPONSE	GOVT: SERVICE	SEMI-GOVT. SERVICE	PRIVATE SERVICE	OWN BUSINESS	ANY OTHER (PLEASE SPECIFY)
1. Punjab	107	33	7	34	3	3
2. Sindh	153	18	4	35	4	10
3. NWFP	52	15	10	11	3	7
4. Baluchistan	10	9	1	4	0	1
5. Islamabad	2	0	0	2	0	0
6. AJK	2	3	0	1	0	0
7 Northern Areas	0	1	0	0	0	0
TOTAL :	326	79	22	87	10	21
PERCENTAGE :	59.8%	14.5%	4.0%	16.0%	1.8%	3.9%

This table shows that 16% graduates at national level were able to get job in the private organizations, 14.5% in the government sector and 1.8% were engaged in their own business, 4% Semi-Government service, 4% any other while 60% did not respond. This table also reflects the absorption of technical graduates in various sectors. This table also shows the province-wise absorption of graduates in government, semi-government and private service. In Sindh province the absorption is more in private sector which may be due to industries in Karachi.

Question No.11 was asked to know the duration of getting degree and securing full time job. Table-12 indicate time taken in getting first full time job.

Table-12
TIME TAKEN IN GETTING FIRST FULL TIME JOB

	WITHIN 3 MONTHS	4-6 MONTHS	LONGER THAN 6 MONTHS	N.R
G.C.T. Lahore	17	17	33	87
G.P.I. Sahiwal	1	-	-	6
G.P.I. Women Lahore	1	-	1	11
GPI.Women Faisalabad	-	-	-	2
G.C.T. Hyderabad	11	11	7	115
G.P.I. Women Karachi	6	5	7	20
G.P.I. Women Sukkur	2	-	2	7
G.J.M.I.T. Karachi	5	3	1	18
G.C.T. Peshawar	6	3	15	31
G.P.I.Women Peshawar	2	3	2	3
G.P.I. Haripur	2	4	10	15
G.P.I. Quetta	2	3	13	22
G.P.I. Women Islamabad	-	-	-	2
No Response	1	-	1	8
TOTAL :	56	49	92	348
PERCENTAGE :	10.3%	9.0%	16.9%	63.9%

Note: G.C.T. = Government College of Technology.
G.P.I. = Government Polytechnic Institute.
G.J.M.I.T. = Government Jamia Millia Institute of Technology.

As the table shows that only 10.3% graduates were able to get the job within 3 months, and it took more than six months to 16.9% students. A majority of 63.9% have not given the response. This can be interpreted that 63.9% who did not response may be unemployed.

The next question was asked to know the job opportunities available to students specializing in different technologies. Table 13 presents the data on this question.

Table-13

DIPLOMA TECHNOLOGY AND DURATION FOR GETTING FIRST FULL TIME JOB

TECHNOLOGY	WITHIN 3 MONTHS	4-6 MONTHS	LONGER THAN 6 MONTHS	N.R
01. Electrical	9	11	25	92
02. Civil	9	9	10	44
03. Mechanical	11	8	19	86
04. Architecture	2	4	6	10
05. Draft/Designing	-	-	-	1
06. Machine shop	-	-	-	-
07. Auto & Diesel	-	3	4	27
08. Auto/Farm Machine	-	-	-	-
09. Glass & Ceramics	-	1	-	1
10. Watch Making	-	-	-	-
11. Power	-	-	-	-
12. Refrigeration	3	1	2	7
13. Radio, T.V Elec:	6	5	9	20
14. Public Health	-	-	-	-
15. Metalurgy/Welding	-	-	-	-
16. Instrument	-	-	-	-
17. Foundary and Pattern making	-	-	-	-
18. Chemical	1	-	1	1
19. Textile Weaving	-	-	-	-
20. Textile Spinning	-	-	-	-
21. Tool Design	-	-	1	-
22. Commerce	-	1	1	6
23. Garment	2	1	1	12
24. Any others	-	-	-	1
No Response	13	5	13	40
TOTAL	56	49	92	348
PERCENTAGE :	10.37	9.0	16.9	63.9

There are more job opportunities in electrical, civil and mechanical technologies followed by Radio, T.V, electronics and in the field of architecture.

Q.No.11 was asked to know weather institutions helped their graduates in securing jobs or not. Table-14 presents the details of responses with regard to their enquiry.

Table-14

CROSS TABULATION OF QUESTION NO.11 & Q.NO.12

	HELP IN GETING THE JOB	DO NOT HELP IN GETTING THE JOB	NO RESPONSE
Within 3 months	8	48	-
4 to 6 months	8	41	-
Longer than 6 months	6	84	2
No Response	10	288	50
TOTAL :	32	461	52
PERCENTAGE;	5.9%	84.6%	9.5%

The table shows that only 5.9% obtained help in getting the job from their institutions. The table shows that majority of 84.6% could not seek guidance/help from their respective institutions to secure a job.

Table-15

INSTITUTION WISE TECHNICAL GRADUATES IN EACH DISCIPLINE.

	MACHINE OPERATOR	ELEC: SUPER-VISOR	ELEC-TRITION	TECH: INS-TRUCTOR	AUTO MECHA-NIC	TV/ RADIO MECH:	TECHNI-CIANS	CIVIL MECH: ENGRS.	LABORA-TORY	FORMAN	TECH: METAL WORKER	EMBRIO-DARY	DRAFTS MAN	ANY OTHER	N.R.
No. Response	-	1	-	-	-	2	-	1	-	-	-	-	-	1	5
G.C.T. Lahore	2	10	2	16	7	4	7	5	-	6	1	-	8	25	61
G.P.I. Sahiwal	-	1	-	1	-	-	1	-	-	-	-	-	-	-	6
G.P.I. Women Lahore	-	-	-	1	-	-	-	-	-	-	-	-	1	1	9
G.P.I. Women Faisalabad	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
G.P.I. Hyderabad	3	11	-	4	5	-	4	3	1	1	-	-	1	12	99
G.P.I. Women Karachi	-	1	-	1	-	-	2	-	-	1	-	-	4	7	22
G.P.I. Women Sukkur	-	-	-	3	-	-	-	-	-	-	-	1	-	1	6
G.J.M.I.T. Karachi	-	-	-	1	-	-	2	1	-	1	-	2	1	2	19
G.C.T.Peshawar	2	4	2	3	3	-	1	1	-	1	-	-	-	13	25
G.P.I. Women Peshawar	2	-	-	1	-	-	-	-	-	-	-	-	-	4	4

G.P.I. Haripur	-	1	1	2	-	-	3	2	-	-	1	-	1	7	13
G.P.I. Quetta	-	3	-	1	-	-	-	3	-	2	-	-	-	13	18
G.P.I. Women Islamabad	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
TOTAL :	9	32	5	34	15	6	20	16	1	12	2	3	16	87	287
PERCENTAGE:	1.7	5.9	.9	6.2	2.8	1.1	3.7	2.9	.2	2.2	14.0	.6	2.9	16.0	52.7

Note:-
G.C.T. = Government College of Technology.
G.P.I. = Government Polytecnic Institute.
G.J.M.I.T. = Government Jamia Millia Institute of Technology.

Question No. 11 was asked to know the province-wise status for getting the first full time job.

Table 16 & 17 present information in terms of regions for the above mentioned questions.

Table-16

PERIOD FOR GETTING FIRST FULL TIME JOB

	WITHIN 3 MONTHS	4-6 MONTHS	LONGER THAN 6 MONTHS	NO RESPONSE	TOTAL
Punjab	19(10.2%)	16	37(19.8%)	115	187
Sind	25(11.2%)	20	19(8.5%)	160	224
NWFP	11(11.2%)	9	24(24.5%)	54	98
Baluchistan	1	2	9	13	25
Islamabad	0	2	0	2	4
AJK	0	0	2	4	6
Northern Areas	0	0	1	0	1
Total	56	49	92	348	545
Percentage	(10.3%)	(9.0%)	(16.9%)	(63.9%)	(100%)

This table shows that majority of the students (64%) were unable to get the jobs. Only 10.3% got jobs within 3 months 19% in 4-6 months period and 16.9% took longer than 6-months to get the job. If we see provincewise situation it is revealed that in punjab we have 187 respondants out of which 19 (i.e. 10.2%) got job within 3 months while 37 (i.e. 19.8%) took more than 6 months to get the job. In Sind province out of 224 respondents, 25 (11.2%) were able to get job within 3 months and 19 (8.5%) took more than 6 months. From the NWFP province out of 98 respondants, 11 (11.2%)

were able to get job within 3 months and 24 (24.5%) took longer than 6 months.

Question No.12 was asked to know whether the graduates were helped by the institution in getting the job or not.

Table-17

INSTITUTIONAL HELP IN GETTING JOB

	YES HELPED	NOT HELPED	NO RESPONSE
Punjab	8	165	14
Sind	14	186	24
NWFP	8	80	10
Baluchistan	2	19	4
Islamabad	0	4	0
AJK	0	6	0
Northern Areas	0	1	0
Total	32	461	52
Percentage	(5.9%)	(84.6%)	(9.5%)

This table shows that majority of students (84.6%) are not guided/helped by their institutions in securing the jobs while only 5.9% graduates were helped in getting the job.

Question No.13 was asked to know how did the graduates get the job. Different sources for getting the job were given in the questionnaire and the Respondant were requested to tick the appropriate source.

Table-18
METHODS OF RECRUITMENT

	EDUCATIONAL INSTITUTION	PERSONAL CONTACT	EMPLOYMENT EXCHANGE	NEWS-PAPER	RELATIVE	ANY OTHER	N.R.*
Punjab	3	36	5	39	5	3	96
Sind	6	21	4	30	6	7	150
N.W.F.P	6	13	2	19	7	2	49
Baluchistan	-	5	-	7	2	-	11
Islamabad	-	1	-	1	-	-	2
A.J.K.	1	2	-	1	-	1	1
Northern Areas	-	1	-	-	-	-	-
TOTAL :	16	79	11	97	20	13	309
PERCENTAGE:	2.9%	14.5%	2.0%	17.8%	3.7%	2.4%	56.7%

(*) N.R. = No Response.

This table shows that 56.7% (majority) did not give any response. 17.8% got job through newspaper advertisements and 14.5% got job through personal contacts. The table also shows that Educational institutions and employment exchange are not helpful in getting the job because the percentages in getting job through these sources is only 2.9% and 2.0% respectively.

Question No.14 was asked to know the period taken to get the present job.

Table-19
TIME TAKEN IN GETTING THE PRESENT JOB

	WITHIN 3 MONTHS	3-6 MONTHS	LONGER THAN 6 MONTHS	OVER A YEAR	N.R*
Punjab	17	29	23	14	104
Sind	14	17	7	16	170
NWFP	7	12	14	14	51
Baluchistan	3	5	-	6	11
Islamabad	1	1	-	-	2
AJK	2	-	3	-	1
Northern Areas	1	-	-	-	-
Total	45	64	47	50	339
Percentage	(8.3)%	(11.7)%	(8.6)%	(9.2)%	(62.2)%

(*) N.R. = No Response

69

This table shows that majority of the respondants 62.2% are unemployed. Only 8.3% were able to find the job with in a period of 1-3 months.

11.7% got job in 3-6 months and 8.6% in 6-12 months 9.2% in over a year. It means that only 37.8% graduates were able to get job in a year.

Question No. 15: This question was asked from employed graduates to know their level of satisfaction with their present job. The responses received are presented in table-20.

Table-20

LEVEL OF SATISFACTION

	HIGH SATISFIED	SATISFIED	DISSATISFIED	NO RESPONSE
Punjab	10	71	46	60
Sind	21	69	35	99
NWFP	9	34	22	33
Baluchistan	3	7	9	6
Islamabad	-	-	2	2
AJK	1	1	2	2
Northern Areas	1	-	-	-
Total	45	182	116	202
Percentage	(8.3%)	(33.4)%	(21.3)%	(37.1)%

From this table it is evident that only one third respondants are highly satisfied with their jobs. Combining column (i) and (ii) we can say that 41.7% were satisfied and other were not satisfied.

Question No.18 was asked to know whether the present technologies are fulfilling the requirements of the country or not.

Table-21

AVAILABILITY OF TECHNOLOGIES AND DEMANDS OF JOB MARKET

	YES	NO	NO RESPONSE
Punjab	92	81	14
Sind	115	81	28
NWFP	52	38	8
Baluchistan	15	9	1
Islamabad	2	2	-
AJK	5	1	-
Northern Areas	1	-	-
Total	282	212	51
Percentage	(51.7%)	(38.9%)	(9.4%)

This table shows that half of the respondents i.e. 51.7% were of the view that present technologies are fulfilling the requirements of the country while 38.9% gave negative response. This point is very critical and needs attention of the planners.

Analysis of Principal's Questionnaires:

Question-B, consisted of 11 questions and was designed to seek information from institutional heads. There are total 36 colleges of technology/polytechnics institutions, out of which we received the responses of 34 institutional heads.

Question No.1 & 2 were asked to know the name, address and year of establishment of the institution.

Question No.3 was asked to know the disciplines/ technologies being taught in the institution. List of the disciplines were provided and they were requested to tick the disciplines being taught in their institutions from the list.

Table-22

DISCIPLINES/TECHNOLOGIES OFFERED BY INSTITUTION

NAME OF TECHNOLOGY	TOTAL
Electrical	21
Civil	20
Mechanical	17
Architecture	4
Drafting & Designing	1
Machine Shop	2
Auto and Diesel	5
Auto and Farm Mach	3
Glass & Ceramics	-
Watch Making	1
Power	-
Refrigeration	3
Radio, TV and Electronics	13
Public Health	-
Metallurgy & Welding	1
Instrument	3
Foundary & Pattern Making	1
Chemical	4
Textile Weaving	2
Textile Spinning	2
Tool design	1
Commerce	4
Other (Pl. Specify)	8

This table shows the frequencies of the disciplines being taught by the institutions. Electrical, civil, mechanical and electronics (Radio/TV) are the disciplines being taught by majority of the institutions whereas, public health, power and glass/ceramics by none.

Question No.4 was asked to know the adequacy of facilities like workshop, laboratory, library and research available in various institutions.

Table-23

ADEQUACY OF ACADEMIC FACILITIES IN TECHNICAL INSTITUTES

	ADEQUATE	INADEQUATE	NO RESPONSE	TOTAL
Workshop	5	2	27	34
Laboratory	13	9	12	34
Library	20	12	2	34
Research	18	14	2	34
Any other	14	19	1	34

As the table shows that out of 34 respondants, 5 have adequate workshop facilities, 13 have laboratory facilities, 20 had library facilities and 18 had research facilities. This table shows that only 50% institutions have research and library facilities and the other facilities are very poor.

The question No.5 was asked from the institutional heads whether or their organization help their graduates in getting jobs.

Table-24

AVAILABILITY OF STUDENT'S GUIDANCE/SERVICE IN GETTING THE JOB

INSTITUTION HELP	DO NOT HELP	NO RESPONSE	TOTAL
21	13	-	34

This table shows that out of 34 institutions only 21 institutions help the students in getting the jobs whereas 13 did not provide any help.

Question No.6 was asked to know whether the institutions have linkage with the organization for helping the students in getting the jobs. The table No.25 presents the responses of various institutions in this regard.

Table-25

INSTITUTIONAL HELP IN GETTING JOBS

	GOVERNMENT ORGANIZATION	SEMI-GOVT: ORGANIZATION	PRIVATE ORGANIZATION	ANY OTHER
Yes	8	11	15	1
No	26	23	19	33
Total	34	34	34	34
No linkage	18	16	34	

This table shows that majority of the institutions do not approach to the hiring organizations for helping the students in getting jobs. 30%-40% institutions approached only to semi-government and private organizations.

Question No.7 was asked to know whether the organizations approach to the institution for offering jobs to their graduates.

Table-26

LINKS BETWEEN EMPLOYER'S AND INSTITUTIONS

YES	NO	N.R	TOTAL
21	12	1	34

Out of 34 institutional heads 21 have responded that different organizations approach for offering jobs to them and 12 institutional head reported that they were not approached by any one in this regard.

Question No.8 was asked to assess the preferences of disciplines for which different organizations approach the institution for offering the jobs.

Table-27

WEIGHTAGE OF DIFFERENT DISCIPLINES FOR JOBS OFFERING BY DIFFERENT ORGANISATIONS

NAME OF TECHNOLOGY	FREQUENCY	TOTAL	PERCENTAGE
Electrical	1,1,2,2,4,4,	14	41.2%
Civil	1,1,1,4	7	20.6%
Mechanical	1,2,4,1,4	12	35.3%
Architecture	-	-	
Drafting & Designing	1	1	
Machine Shop	1,1	2	
Auto and Diesel	1	1	
Auto and Farm Machine	1,1	2	

lass and Ceramics	1	1	
Watch Making	1	1	
Power	1	1	
Refrigeration	2,1	3	
Radio, TV & Electronics	2,3,5	10	29.4%
Public Health	-	-	
Metallurgy and Welding	1	1	
Instrument	1	1	
Foundary & Pattern Making	1	1	
Chemical	1,2	3	
Textile Weaving	-	-	
Textile Spinning	1	1	
Tool Design	-	-	
Commerce	1,2	3	
Other (Please Specify)	6	6	

It is evident from this table that the electrical, mechanical and electronics (Radio & TV) are in more demand as compared to other disciplines.

Question No.9 was asked from the institutional heads to seek their suggestions for the improvement of technical education in Pakistan.

Table-28

SUGGESTIONS FOR IMPROVEMENT OF TECHNICAL EDUCATION IN PAKISTAN

	WEIGHTAGE	PERCENTAGE
1. Provision of latest equipment	7	20.5%
2. Introduction of new technology	10	29.4%
3. To establish more technical institutions	3	8.8%
4. Provision of scholarship and other incentives for higher studies	5	14.7%
5. Provision of better qualified teacher/instructor	8	23.5%
6. More emphasis on practical field work/internship programmes as compared to theory.	8	23.5%
7. Equivalence of B.Tech to B.Sc. Degree	2	5.8%
8. To provide suitable jobs to the graduates in their respective fields	3	8.8%
9. Creation of educational environment fair examination and good administration etc.	8	23.5%
10. Inter and intrsectoral coordination (such as technical wing; institution)	9	26.4%

(*) Respondents were allowed to give more than one suggestions. Weightage and percentage is calculated out of 34 responses.

In this question the institutional heads were requested to present their suggestions for improvement of technical education in Pakistan. In addition they were also asked to recommend the introduction of new technologies in technical institutes in the country.

Question No. 10 was asked to know the level of satisfaction of institutional heads with the present technologies/ discipline.

Table-29

ADEQUACY OF PRESENT CURRICULUM/SUBJECT MATTER/ TECHNOLOGIES AND JOB MARKET

YES	NO	N.R	TOTAL
13(39%)	19(56%)	2(5%)	34(100%)

This table shows that majority (19 out of 34) respondents were of the view that the contents/subject matter/ practicals etc of various technologies are not meeting the requirements of the country whereas only 13 showed their satis- faction with these technologies.

Question No.11 was asked to indicate. Technologies which are required to meet the future needs of the country.

Table-30

RECOMMENDATIONS FOR INTRODUCING NEW TECHNOLOGIES

	TOTAL	PERCENTAGE
1. Computer technology	19	(54%)
2. Electronics Technology	5	(15%)
3. Fuel Technology/Petro Chemical	5	(15%)
4. Mining Technology	1	
5. Optic Technology		
6. Communication Technology	2	
7. Bio-Medical Technology	2	
8. Atomic Technology/Nuclear	1	
9. Agriculture Technology/Food Processing	5	(15%)
10. Solar Technology		

11. Aeronautical Engineering Design	
12. Space Technology/Satellite Technology	1
13. Textile and Cosmatic	2
14. Printing and graphic	2
15. Silicon Technology	1
16. Production Technology	1
17. Architecture Technology	3
18. Public health	1

Majority of the institutional heads were of the view that computer technology may be introduced in the country. The next priority was given to electronics technology; fuel/petro chemical technology and agriculture/food technology.

Analysis of Employer's Questionnaire:

After analysing the questionnaire-A. the employers of the students were identified. Consequently a questionnaire-C was designed for these employers to know their reaction toward the quality of work performed by technical graduates.

This questionnaire-C consisted of 13-questions. Question No.1 was asked to know the basic information about the respondent organizations.

Question No. 3 was asked to know the type of respondent organization. Table-30 presents the responses of various organization.

Table-31

TYPES OF ORGANIZATIONS HIRING TECHNICAL GRADUATES

	FREQUENCY	PERCENTAGE
1. Government	10	40%
2. Semi Government	3	12%
3. Private	10	40%
4. Any other	1	4%
5. No Response	1	4%

As the table indicates that 40% government organizations, 40% private organizations and 12% semi-government organizations hired technical graduates.

Question No. 4 was asked to know the total staff position in 1986 and the share of technical staff.

Table-32

SHARE OF TECHNICAL STAFF IN THE EMPLOYING ORGANIZATION

	TOTAL(1986)	TECHNICAL	1985-87	N.R
1. Government	892	128	4	-
2. Semi Government	599	34	15	
3. Private	6210	230	4	
4. Any other	-	-	-	
5. No Response	-	-	-	

Question No.6 was asked to know the way by which employers employ the technical staff.

Table-33

METHOD OF EMPLOYING TECHNICAL STAFF

	FREQUENCY WT.	PERCENTAGE*
1. Educational Institutions	6	24%
2. Employment Exchange	4	16%
3. Newspaper Advertisement	22	88%
4. Personal Contacts	5	20%
5. Any other (Please specify)	1	4%

(*) Five options were given, respondants were allowed to tick more than one options. Therefore for each fequency and its percentage of given option is out of 25 cases.

This table shows that a great majority employers approximately 88% recruit technical staff through advertisement in the newspaper. Only 24% employers recruit through Educational Institutions; 16% through employment exchanges; and 20% through personal contacts.

Question No. 7 was asked to know the criteria for recruitment of technical employees.

Table-34

CRITERIA OF SELECTION FOR JOBS

CRITERIA	FREQUENCY WT.	PERCENTAGE(*)
1. Written Test	2	8%
2. Interview	13	52%
3. Written Test & Interview	13	52%
4. Any other (Please specify)	1	4%

(*) Four options were given, respondants were allowed to tick more than one options. Therefore for each frequency and its percentage of given option is out of 25 cases.

This table shows that majority of the organization employ technical staff through conducting interview and tests.

Question No. 8 was asked to know whether these organizations provide job-description to the employee at the time of recruitment

Table-35

PROVISION OF JOB DESCRIPTION

PROVIDE JOB DESCRIPTION	FREQUENCY WT.	PERCENTAGE
Yes	20	80%
No	3	12%
No Response	2	8%

This table shows that 80% organizations provide job description to the technical employees.

Question No. 9 was asked to know whether the organizations provide chances of promotion, advancement and on the training on the job.

Table-36

STAFF DEVELOPMENT OPPORTUNITIES IN EMPLOYING ORGANIZATION

PROVISION OF OPPORTUNITIES	FREQUENCY WT.	PERCENTAGE(*)
Promotion	22	88%
Professional Advancement	15	60%
On the job training	17	68%
Any other	1	4%

(*) Four options were given, respondants were allowed to tick more than one optins. Therefore for each fequency and its percentage of given option is out of 25 cases.

This table shows that 88% organization provided opportunities for training on the job and professional advancement.

Question No.10 aimed at seeking the suggestions from the employer for improving the competence of technical graduates.

Table-37

EMPLOYER'S SUGGESTIONS FOR IMPROVEMENT OF LEVEL OF PROFESSIONAL COMPETENCY

	FREQUENCY WT.	PERCENTAGE
1. Provision of latest equipment	3	12%
2. More emphasis on practicals field work/internship programmes as compared to theory	11	44%
3. Provision of better qualified teacher/ instructor in the technical institution	-	-
4. Provision of better facilities incentives/motivations for the employees	11	44%

This table shows that (44%) respondents were of the view that better facilities be provided, more emphasis be made on practicals/field work/internship programmes etc. for the improvement of the competence of technical employees. The other 44% reiterated the need of latest equipment.

Question No.11 was asked whether the employers prefer to employ the technical graduates or not.

Table-38

PREFERENCE TO EMPLOY TECHNICAL GRADUATES

PREFERENCE	FREQUENCY	%AGE
Yes	20	80%
No	1	4%
No Response	4	16%

80% respondents were of the view that they prefer the person who qualified from polytechnics/colleges of technology as compared to non-qualified.

Question No. 12 was asked to know the employers point of view whether the present technologies meet their particular requirements of their industry/organization.

Table-39

PRESENT TECHNOLOGIES & REQUIREMENTS OF THE COUNTRY

	FREQUENCY	PERCENTAGE
Yes	16	64%
No	7	28%
No Response	2	8%

This table shows that 64% respondents were of the view that present technologies meet most of the requirements of their industry while 28% reported unsatisfaction.

Question No.13 was asked to indicate new technologies required in future.

Table-40

EMPLOYER'S DEMAND OF NEW TECHNOLOGIES IN FUTURE

	WEIGHTAGE	PERCENTAGE*
1. Electrical	8	32%
2. Civil	6	24%
3. Mechanical	1	4%
4. Architecture	3	12%
7. Auto and Diesel	1	4%
13. Radio, TV and Electronics	1	4%
22. Commerce	1	4%
No response	11	44%

(*) Four options were given, respondants were allowed to tick more than one optins. Therefore for each weightage and its percentage of given option is out of 25 responses.

This table shows that majority (32%) indicated the demand for the Electrical Technology 24%, for Civil 4% each for Mechanical; Auto & Diesel; Radio, TV & Electronics and Commerce etc. while 44% did not response.

CHAPTER - IV

FINDINGS AND RECOMMENDATIONS

Technical education in its present form started in Pakistan about 34 years ago when for the first time two polytechnic institutes were established in Lahore and Rawalpindi in 1955. Since them, technical education has gone through many changes in its content and size. This study attempted to analyse the opinion of principals, graduates and employers about the relevance of the present polytechnic institutes, curriculum to the job market. The specific objectives of the study were as follow :

1. To find out the employment status of the students who graduated during 1985/86.
2. To compare the ratio of technical manpower product in various technologies/trades.
3. To examine the relevancy and quality of manpower produced from the employer's point of view.
4. To find out the future needs of the country in various technologies.
5. To create a data base for tracer study on technical education in Pakistan.

The study was conducted on national level. The data was collected through questionnaires. Three questionnaires: one for the graduates of technical/polytechnic institute, second for the institutional heads and third for the employers of these graduates were developed. The questionnaires were designed to answer each of the objective proposed for the study. The graduate's questionnaire

consisted of 19 questions; employer's 13 questions and principals 11 questions.

The principal's questionnaires was mailed to 36 institutional heads. 35 responses were received back.

Graduates questionnaire was mailed to 1000 graduates of 13 institutions. These institutions were selected in accordance with the principles of stratified randum sampling techniques. The sample consisted of institutions from Sind, Punjab, NWFP, 1 frin Baluchistan and federal capital.

The questionnaires were mailed to 1,000 students. Inspite of repeated reminders only 545 responded.

Out of 545 respondents only 184 were employed.

So questionnaires were mailed to the employer's of these graduates. Only 25 responses were received.

FINDINGS:

All the questionnaires were coded and analysed in MIS Division of the Academy. Following are the findings of this study.

1. 50.6% of the graduates of 1985-87 session were unemployed as on May, 1988 (when this information was collected). Where as 34% were paid employee and 14% were self employed, 1.3% did not respond. In NWFP the ratio between employed and unemployed was equal while the number of unemployed in Punjab was two times and in Sind was three times. In AJK and Baluchistan the number of

unemployed is less than the employed which shows absorption of technical graduates.

2. The job opportunities are more in favour of urban students than rural students. Out of 184 employed, 50% were from urban areas and 36% were from rural areas, while 8% did not respond. More over, majority of the self employed also belonged to urban areas.

3. The rate of employment is slightly higher in Government and Semi-Government organizations followed by private sector. In the province of Sind, more people were employed in private sector than in the public sector.

4. Usually it takes 3 months to one year to secure the full time appropriate job.

5. Usually the institutions do not help/guide their graduate to secure employment.

6. Most of the institutions offer programs in electrical (41.2%), civil (20.6%), mechanical (35.3%) and electronics (29.4%) technologies.

7. Most of institutions are suffering from problems of inadequate, library and laboratory facilities.

8. There are better job opportunities in the field of electrical, mechanical and electronics.

9. Majority of institutional heads complained that contents/subject matter/practical work etc., of various technologies were not meeting the demands of the job market.

10. Majority of institutional heads were of the view that computer technology electronic technology, fuel/petro chemical technology and agriculture/food technology, be introduced in the country.

11. Employer recruit technical staff through news paper advertisement (83%), educational institutions (24%), employment exchanges (16%) and through personal contents (20%).

12. Majority of the organizations also provide opportunities to this technical employment for promotion (88%), training on job (65%) and professional advancement (60%).

13. Majority of the employers were of the view that better facilities be provided, more emphasis be laid on

practicals/field work/internship programmes etc., for the improvement of the competencies of technical employers.

14. Employers also recommended introduction of new technologies in polytechnic institutes.

RECOMMENDATIONS:

General Recommendations:

Some of the important aspects of planning Technical Education at all levels were identified to be as under:-

1. The expansion and modifications of programmes should be affected on the basis of a reliable manpower information system capable of collecting, storage, updating, retrieval and analysis of information on employment opportunies.

2. Selected institutions (Universities, Colleges of Technology/Commercial Institutes/Vocational Institutions) should act as focal points to identify problems of community and promote transfer of know-how and technology, help in mounting special purpose surveys and studies and undertake community development tasks.

3. All educational institutions catering to the development of technical and professional manpower should endeavour to increase the efficiency and effectiveness of their programmes by systematic improvements in managerial processes through use of modern management techniques.

4. Staff development for staff of all categories needs to be designed and administered on systematic basis for content up-dating, pedagogical skills and industrial exposure. Relevant management training should be integrated in such a programmes.

5. Institutions should be required to collaborate with employers organisations/industries on systematic basis and modality of cooperation clearly identified and formalised. Such modalities may involve sharing of staff and facilities, participation of employers in governance, administration and evaluation of institutions, providing work experience to staff and students, using

institutional staff for consultancy work and problem solving, mounting joint research and developmental activities, organising seminars/ conferences on topical issues etc. Institutions be encouraged to set up consultancy services.

6. Learning Resource Centres be established in selected institutions to develop, test and promote use of multimedia teaching learning resources for enhancing the learning achievements of students and overcoming textual material shortages.

7. The evaluation of students should emphasise more the learning of practical skills and acquisition of proficiency for analysing the actual problems of production/development.

8. The tasks of planning and organising technical education from the craftsmen level to that of engineers/technoligists levels, should be coordinated by a single agency at the national level, to ensure balanced development through an integrated approach.

9. Institution and Programmes Evaluation need to be systematically designed and implemented through development of performance indicators and training of evaluators in the use of various evaluation models.

10. Curriculum Research should be institutionalised and integrated with the analysis of employment market and job-opportunities.

11. Examination system should be backed by intense research/surveys/studies, training of evaluators, test-item banking, model question papers and marking tecnniques, and involvement of users.

12. A variety of Continuing Eduation programmes be introduced at all levels for serving personnel through flexible, various levels should be integrated logically to allow for upgradation of competent students. A Credit System with provision for multi-point entry in part-time and full time programmes should be introduced.

13. Administrative and academic autonomy be given to selected institutions by bringing them under suitable governing bodies.

(b) **Specific Recommendations:**

1. At present the share of female students in technical education is very low i.e. about 5% as compared to male students, they have the some level of unemployment as men. As the Government of Pakistan intends to increase the share of women in labor force, women will have more job opportunities. Therefore, it is, recommended that female participation rate be gradually raised to 25% during the Seventh Five Year Plan.

   It is also pointed out that the existing women institutions are not working upto maximum optimal level.

   Therefore, women should be given special incentives to enroll themselves in these institutions.

2. The employers have shown their dissatisfaction with the quality of training/skills possessed by graduates. Therefore, present curriculum be evaluated and updated. More emphasis be given laid on practicals/field work, internships etc.

3. Most of the institutions are suffering from problems of inadequate staffing, workshops, libraries and laboratories. Therefore these problems be paid immediate attention in oder to improve the quality of education in polytechnics, institutes.

4. The new emerging fields should be introduced in Polytechnics/Colleges of Technology. These include computers (hardware & software). Micro-processors, oil, gas and petro chemical, rubber, leather, instrumentation, rural development, industrial design, town planning, ship building, aeronautical, telecommunications, catering and hotel management, bio-medical technology, mining and metallurgy, woold technology, food technology, hair dressing beautician and cosmetics, printing and graphic arts.

5. Low cost books should be produced for technical education by National Book Foundation.

6. Rental Libraries and Book Banks be established in Polytechnic Institutes.

7. A National Textbook Board for Technical Education should be established which would develop print and distribute textbooks for Polytechnics, Commercial Institutes and Vocational Institutes.

8. Learning Resource Centres should be established in selected Polytechnic Institutes to produce multi-media packages for Teaching Learning Resources under overall supervision of the Text Book Board for Technical Education.

9. Systematic Training programmes should be mounted to impart skills amongst various teachers for local development of learning resources.

10. Private sector/employers should be emerged to provide financial resources for the researches to be carried out in the Polytechnics. A strong linkages should be established between the Polytechnics and Industrial sector.

11. Necessary physical facilities with major emphasis on libraries and laboratories should be provided to each Polyttechnic Institute.

12. The curriculum and content of the Polytechnic Institute should meet the need of job market. This will generate more job opportunities.

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4. ibid p.556

5. Government of Pakistan, First Five Year Plan 1955-60, Karachi, National Planning Board 1957, p.540

6. Government of Pakistan, Commission on National Education, 1959. p.11

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11. Government of Pakistan, Plannsing Commission, The Fifth Five Year Plan (1978-83), Printing Corporation of Pakistan Press, Karachi, 1978, p.152

12. Government of Pakistan, Planning Commission, The Seventh Five Year Plan 1983-88, Islamabad, Printing Corporation of Pakistan, 1983, p.392

PUNJAB

1. Government College of Technology, Lahore
2. Government College of Technology, Rasul, Gujrat
3. Government College of Technology, Multan
4. Government Polytechnic Institute, Sialkot
5. Government Polytechnic Institute, Faisalabad
6. Government Polytechnic Institute, Sargodha
7. Government Polytechnic Institute, Bahawalpur
8. Government Polytechnic Institute, Leiah
9. Government Polytechnic Institute, Sahiwal
10. Government Swedish-Pak Institute of Technology, Gujrat.
11. Government Polytechnic Institute of Printing and Graphic Arts, Lahore.
12. Government Polytechnic Institute for Women, Lahore
13. Government Polytechnic Institute for Women, Faisalabad
14. Government Polytechnic Institute for Women, Multan
15. Government Technical Training College, Faisalabad

SINDH

16. Government College of Technology, SITE, Karachi
17. Government College of Technology, Wahdat Colony, Hyderabad
18. Government College of Technology, Khairpur
19. Government Polytechnic Institute for Women, Liaqatabad, Karachi
20. Government Polytechnic Institute for Women, Sukkur
21. Government Polytechnic Institute, Jaccobabad
22. Government Saifi Eidi Zahibi Institute of Technology, North Nazimabad, Karachi
23. Government Jamia Millia Institute of Technology, Malir City, Karachi
24. Government Habib College of Technology, Nawabshah
25. Swedish-Pak Institute of Technology, Landhi, Karachi
26. Government Polytechnic Institute, Sukkur
27. Government Polytechnic Institute, Dadu
28. Government Polytechnic Institute, Mirpur Khas

N.W.F.P

29. Government College of Technology, Peshawar
30. Government Polytechnic Institute, Dera Ismail Khan
31. Government Polytechnic Institute for Women, Peshawar
32. Government Polytechnic Institute, Nowshera
33. Government Polytechnic Institute, Sarai Saleh, Haripur
34. Government Polytechnic Institute, Swat

BALUCHISTAN

35. Government Polytechnic Institute, Quetta

FEDERAL CAPITAL TERRITORY

36. Government Polytechnic Institute for Women, Islamabad.

QUESTIONNAIRE -A

Sr No

QUESTIONNAIRE

TECHNICAL EDUCATION :

ITS RELEVANCE TO JOB MARKET

ACADEMY OF EDUCATIONAL PLANNING AND MANAGEMENT
MINISTRY OF EDUCATION
P. O. BOX 1566
ISLAMABAD
FEBRUARY 1988

From.
Muhammad Aslam Bhatti
Research Officer

Academy Of Educational Planning And Management
Ministry Of Education
Sarya Chowk, G-8/1
P.O. Box 1566, Islamabad
Phone : 853259
853039

March, 1988

Subject:- TECHNICAL EDUCATION – ITS RELEVANCE TO JOB MARKET.

Dear Sir,

The attached questionnaire concerned with the employability and absorptive capacity of the technical graduates in Pakistan is part of an evaluation study. This study is being carried out by the Academy of Educational Planning and Management, Ministry of Education, Islamabad.

We are particularly desirous of obtaining your response because your experience and views will contribute significantly towards evaluating technical education and its relevancy in the job market.

The questionnaire is designed to make it possible for us to obtain the necessary data while requiring minimum of your time. It will be appreciated if you will complete the questionnaire prior to March 25, 1988 and return it by folding stamped side upward. This research cannot be carried out until we receive your response on or before the due date.

Your anonymity as a participant is guaranteed. All information will be held in strict confidence and will be used for statistical analyses only.

Thanking you for your cooperation.

Yours sincerely,

(Muhammad Aslam Bhatti)

S. No. | | | | | | (For official use only)

EMPLOYEES

1 Name: _____

2 Mailing Address: _____

_____

Tehsil _____ District _____ Province _____

Phones: Office _____ Residence _____

3 Age (in years) _____

4 Academic Qualifications:

Exam	Passing Year	Div./ Grade	Technology/ Trade	Institution
Matric			i) Humanities ii) Science	
Diploma				
Degree (B. Tech)				
Any other (Pl. specify)				

5. District of Domicile _____

1	Rural
2	Urban

6. Occupation of parents/guardians.

1	Government Service
2	Semi Government
3	Private Service
4	Own business
5	Agriculture
6	Any other (Please specify)

7. Annual income of parents/guardians in Rs. _____

8. Are you presently employed?

1	Yes
2	No

9. If yes:

(a) Name and mailing address of the employer

_____

_____ _____ Phone _____

Tehsil _____ District _____ Province _____

(b) Designation:
(Please tick the relevant)

1	Machine Operator
2	Electrical Supervisor
3	Electrician
4	Technical Instructor
5	Auto Mechanic
6	TV/Radio Mechanic
7	Technician
8	Civil Mechanic
9	Laboratory Engineer
10	Foreman
11	Technical Metal Worker
12	Embroidery
13	Draftsman
14	Any other (Please specify)

10. What was your first full time job after graduation?

1	Government Service
2	Semi Government Service
3	Private Service
4	Own business
5	Any other (Please specify)

11. How long after graduation did you find your first full time job?

1	Within 3 months
2	4 to 6 months
3	Longer than 6 months

12. Did your institution help in getting the job?

1	Yes
2	No

13. How did you get the present employment? (Please Specify)

1	Educational Institution (where you completed your technical education)
2	Personal Contacts
3	Employment Exchange
4	Newspaper Advertisement
5	Relatives
6	Any other (Please specify)

14. How long have you been on your present job?

1	1-3 months
2	3-6 months
3	6-12 months
4	Over a year

15 Do you feel satisfied with the skills/technology you studied in the technical institution related to your present job?

1	Highly satisfied
2	Satisfied
3	Dissatisfied

16 What would you suggest to improve the skills/technology of your specialization?

17 What would you suggest to improve the overall technical education in Pakistan?

18. Do you think that the present technologies meet most of the requirements of the country?

1	Yes
2	No

19. If no, please indicate other technologies required in future?

_____

_____

_____

_____

_____

_____

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Muhammad Aslam Bhatti
Research Officer
ACADEMY OF EDUCATIONAL
PLANNING & MANAGEMENT
G-8/1, P.O. Box 1566
ISLAMABAD

بسم الله الرحمن الرحيم

Academy Of Educational
Planning And Management
Ministry Of Education
Sarya Chowk, G-8/1
P.O. Box 1566, Islamabad
Phone : 853259
853039

From:
Muhammad Aslam Bhatti
Research Officer

February 28, 1988.

Subject: TECHNICAL EDUCATION -ITS RELEVANCE TO JOB MARKET.

Dear

The attached questionnaire is concerned with the employability and absorptive capacity of the technical graduates. This study is being carried out by the Academy of Educational Planning and Management, Ministry of Education, Islamabad. The objectives of the study are as below:

1. To find out the employment status of the students who graduated during 1985-86.
2. To compare the ratio of technical manpower product in various technologies/trades.
3. To examine the relevancy and quality of manpower produced from the employer's point of view.
4. To find out the future needs of the country in various technologies.
5. To create a data base for tracer study of the effects of Technical Education on students in Pakistan.

We are particularly desirous of obtaining your response because your knowledge, experience and views will contribute significantly towards evaluating technical education and its relevancy to the job market.

The questionnaire is designed to make it possible for us to obtain the necessary data while requiring minimum of your time. It will be appreciated if you will complete the questionnaire prior to March 20, 1988. This research cannot be carried out until we complete the analysis of questionnaire's data.

All information will be held in strict confidence.

Thanking you for your cooperation.

Yours sincerely,

MBhatti

(Muhammad Aslam Bhatti)

The Principal,

S.No. |___|___ ___ ___|

INSTITUTION

1. Name and Address of the Institution_____

_____

Tehsil_____District_____

Province_____Phone No._____

2. Year of establishment_____

3. Please tick disciplines being taught in your Institution:

1.	Electrical
2.	Civil
3.	Mechanical
4.	Architecture
5.	Drafting & Designing.
6.	Machine Shop
7.	Auto and Diesel.
8.	Auto and Farm Machinary.
9.	Glass and Ceramics
10.	Watch Making
11.	Power
12.	Refrigeration
13.	Radio, TV & Electronics
14.	Public Health.
15.	Metallurgy & Welding.
16.	Instrument.
17.	Foundry & Pattern Making.
18.	Chemical

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19.	Textile Weaving.
20.	Textile Spinning.
21.	Tool design.
22.	Commerce.
23.	Other (Please specify).

4. Does your institution have adequate/inadequate teaching facilities with reference to:

	Workshop	Laboratory	Library	Research	Any other (Pl. specify) ----------
Adequate	1	1	1	1	1
Inadequate	2	2	2	2	2

5. Does your institution guide/help to the students in getting jobs?

1	Yes
2	No

6. Does your institution approach any of the following organizations for employment of your students?

1	Government organization
2	Semi-Government organization
3	Private organization
4	Any other (Please specify). _____
5	Does not approach

7. Do the different organizatioins approach your institution for employment?

1	Yes
2	No

8. If yes, for which disciplines:

1.	Electrical
2.	Civil
3.	Mechanical
4.	Architecture
5.	Drafting and Designing
6.	Machine Shop
7.	Auto and Diesel
8.	Auto and Farm Machinary
9.	Glass and Ceramics
10.	Watch Making
11.	Power
12.	Refrigeration
13.	Radio, TV & Electronics
14.	Public Health
15.	Metallurgy & Welding
16.	Instrument
17.	Foundry & Pattern Making
18.	Chemical
19.	Textile Weaving.
20.	Textile Spinning.
21.	Tool design
22.	Commerce
23.	Other (Please specify).

9. What would you suggest to improve the technical education in Pakistan?

---

10. Do you think that the present technologies meet most of the requirements of the country?

1	Yes
2	No

11. If no, please indicate other technologies required in future?

QUESTIONNAIRE - C

Sr No

QUESTIONNAIRE

TECHNICAL EDUCATION :

ITS RELEVANCE TO JOB MARKET

ACADEMY OF EDUCATIONAL PLANNING AND MANAGEMENT
MINISTRY OF EDUCATION
SARYA CHOWK, G-8/1
P.O. BOX 1566
ISLAMABAD
MAY, 1988

From:
Muhammad Aslam Bhatti
Research Officer

Academy Of Educational Planning And Management
Ministry Of Education
Sarya Chowk, G-8/1
P.O. Box 1566, Islamabad
Phone : 853259
853039

April, 1988

Subject TECHNICAL EDUCATION – ITS RELEVANCE TO JOB MARKET

Dear Sir,

The attached questionnaire is concerned with the employability and absorptive capacity of the technical graduates. This study is being carried out by the Academy of Educational Planning and Management, Ministry of Education, Islamabad.

We are particularly desirous of obtaining your response because your experience and views will contribute significantly towards evaluating technical education and its relevancy in the job market.

The questionnaire is designed to make it possible for us to obtain the necessary data while requiring minimum of your time. It will be appreciated if you will complete the questionnaire prior to May 31, 1988. This research cannot be carried out without your response on or before due date.

All information will be held in strict confidence and will be used for statistical purposes only.

Thanking you for your cooperation.

Yours sincerely,

(Muhammad Aslam Bhatti)

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S No | | | | | | | (For office use only)

EMPLOYERS

1 Name and Address of the organization _____

_____

Tehsil _____ District _____

Province _____ Phone No. _____

2 Year of establishment _____

3 Type of the organization:

1	Government
2	Semi-Government
3	Private
4	Any other Please specify

4. Size of your organization in respect of technical employees (Write numbers only):

a) Number of total employees in year 1986

b) Number of employees in 1986 passed from Polytechnics/Colleges of Technology _____

c) Number of employees in year 1986 (THOSE WHO PASSED FROM POLYTECHNICS/ COLLEGES OF TECHNOLOGY IN YEAR 1986): _____

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5. Number of Technical employees working in your organization in different fields of specialization:

Sr No.	Specialization	Number in 1986	Number in 1986	requirement in 1990
01.	Electrical			
02.	Civil			
03.	Mechanical			
04.	Architecture			
05.	Drafting/Designing			
06.	Machine Shop			
07	Auto & Diesel			
08.	Auto/Farm Machine			
09	Glass & Ceramics			
10.	Watch Making			
11	Power			
12.	Refrigeration			
13.	Radio TV Electronics			
14.	Public Health			
15	Metalurgy/Welding			
16.	Instrument			
17	Foundry and Pattern making			
18.	Chemical			
19	Textile Weaving			
20.	Textile spinning			
21	Tool design			
22	Commerce			
23	Others (Pl. Specify)			

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6. How do you employee the technical staff?
(You may tick more than one if applicable).

1	Educational Institutions
2	Employment Exchange
3	Newspaper Advertisement
4	Personal Contacts
5	Any other (Please specify).

_____ _____

7 Tick the criteria for selection of the employees?

1	Written Test
2	nterview
3	Written Test & Interview
4	Any other (Please specify).

_____ _____

8 Does your organization provide job-description to your technical employees?

1	Yes
2	No

9 Does your organization provide chances to your employees for (You may tick more than one if applicable).

1	Promotion
2	Professional advancement
3	On the job training
4	Any other (Please specify)

_____

10. What would you suggest to improve the competence of technical employees?

_____

_____

_____

_____

_____

_____

11 Do you prefer to employ a person who qualifies from Polytechnics/Colleges of Technology?

1	Yes
2	No

Give reasons _____

_____

_____

_____

_____

_____

12 Do you think that the present technologies meet most of the requirements of the country?

1	Yes
2	No

13. Please indicate other technologies required in future;

_____

_____

_____

_____

_____

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Name .....

Designation .....

Signature .....

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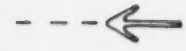

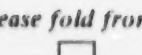

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